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THE WEEKLY NEWSLETTER OF THE WESTERN STATES WATER COUNCIL

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CONGRESSIONAL UPDATE/WATER RESOURCES

Energy and Water Integration Act of 2009

On March 6, Senator Jeff Bingaman (D-NM) introduced S. 531, the Energy and Water Integration Act of 2009, together with Senator Lisa Murkowski (R-AK). In his introductory statement, Bingaman declared, "Energy and water are crucial components of modern life. Production of energy and freshwater are inextricably linked.... As population density continues to increase in already water-stressed regions, it is crucial that the United States develop new policies that integrate energy and water solutions so that one resource does not undermine the use of the other." For example, Bingaman points out that the "two primary options for reducing gasoline use, plug-in hybrids and biofuels, are both more water intensive than gasoline.... If the entire production cycle is considered, some biofuels can consume as much as 20 times more water per mile traveled."

Within 90 days after enactment, S. 531 directs the Secretary of Energy, in consultation with the Secretary of the Interior and the Environmental Protection Agency (EPA) Administrator, to enter into an arrangement with the National Academy of Sciences to conduct an in-depth analysis of the impact of energy development and production on water resources of the United States. It is to include an assessment of impacts of direct use and consumption of water resources related to the transportation and electricity sectors, and a lifecycle assessment of the quantity of water withdrawn and consumed in the production of transportation fuels, or electricity, to evaluate the ratio that the quantity of water withdrawn and consumed in the production of fuels (measured in gallons) or electricity (in kilowatts) bears to the total distance (measured in miles).

The scope is to cover: (1) the exploration for, and extraction or growing of, energy feedstock; (2) the processing of energy feedstock into fuel; (3) the generation, transportation and storage of electricity for transportation; and (4) an analysis of the "efficiency with which the transportation fuel is consumed." Fuels to be evaluated include both domestic and imported crude oil, natural gas (including liquified natural gas), and corn-based ethanol, as well as oil shale, tar sands and advanced biofuels (including cellulosic and algae-based biofuels), coal to liquids (including aviation fuel, diesel and gasoline products), electricity consumed in fully electric and plug-in hybrid vehicles, hydrogen and any reasonably foreseeable combination.

With respect to electricity, the scope is to include the exploration for, or extraction or growing of, energy feedstock, the processing for electricity production and the production of electricity and covering generation that includes different cooling technologies such as water, air and hybrid systems, and technologies designed to minimize carbon dioxide release based on fuels use including coal, natural gas, oil, nuclear energy, solar, wind, geothermal, biomass, the beneficial use of waste heat, and any reasonable combination. It is also to include identification and an assessment of additional impacts uniquely associated with a specific fuel source, including any impact resulting from: (1) any extraction or mining practice; (2) the transportation of feedstocks; and (3) the transportation of fuel and power; and (4) the location of a specific fuel source that is limited to one or more specific geographical regions.

The National Academy would report to the Secretary within 18 months of the date of enactment, and make the completed report public. The Secretary, in consultation with Interior and EPA, would in turn report to the appropriate committees of Congress describing the results of the study and identifying the best available technologies and related strategies to maximize water and energy efficiency in the production of electricity by each type of generation, to include: (1) coal facilities – evaluating different types of coal and generating technologies, as well as designs to minimize and sequester carbon dioxide; (2) oil and natural gas facilities with similar details; (3) hydropower, including turbine upgrades, incremental hydropower, in-stream and pump-storage projects; (4) thermal solar; and (5) nuclear.

Separately, S. 531 Section 4 would direct the Secretary of the Interior to study and evaluate energy used in water storage and delivery operations of major multipurpose Bureau of Reclamation projects to promote the efficient use of energy in water distribution systems – including assessing and estimating the annual energy consumption of projects, identifying those projects that consume the greatest quantity of energy and those aspects of operations that are the most energy intensive, as well as opportunities to significantly reduce current energy consumption and costs through reduced ground water pumping, improved reservoir operations, infra-structure rehabilitation, water reuse and integration of renewable energy generation with project operations. This report would also be due within 18 months.

Section 5 directs the Secretary of the Interior to carry out research, development and demonstration activities on technologies and methods to promote brackish ground water desalination as a viable, cost-effective water supply using the Brackish Groundwater National Desalination Research Facility in Otero County, New Mexico. Section 6 requires a study of water treatment and delivery and energy consumption every three years. Section 7 directs the Secretary of Energy to develop an "Energy-Water Research and Development Roadmap" within 90 days of enactment to address water-related challenges to energy production.

Water Resources Research

On March 4, the House Science and Technology Committee, chaired by Rep. Bart Gordon (D-TN), held a hearing to examine the need for a coordinated federal approach to water research and development to ensure an adequate future water supply. The hearing also addressed H.R. 1145, the National Water Research and Development Initiative Act, introduced by Gordon on February 24. Gordon observed, "California, the central plains of Texas and Oklahoma, and the southeastern states of Georgia, South Carolina and Florida are all likely to experience drought conditions in the coming months. Constraints on water supplies are taking a toll on society, our economy, and the environment. Water is too valuable a resource for us to manage in a crisis-by-crisis fashion.... We need to take decisive action to ensure that the United States can meet the water challenges of 2009 and beyond."

H.R. 1145, reintroduced from the last Congress, would incorporate recommendations from a 2004 report by the National Academy of Sciences. Its purpose is to improve the federal role in designing and implementing water research, development, demonstration data collection and dissemination, education and technology transfer activities to address changes in water use, supply and demand in the United States, including providing additional support to increase water supply through greater efficiency and conservation. It would establish an interagency committee chaired by the Office of Science and Technology Policy, and would include a member from each agency that conducts research related to water or has authority over resources that affect water supply, as well as the Office of Management and Budget. The committee would be tasked with developing a National Water Research and Assessment Plan and encouraging federal coordination, cooperation and technological innovation to avoid duplication and ensure the optimal use of resources and expertise. It would also facilitate information exchange with State and local governments, non-governmental organizations, industry and other stakeholders.

The bill would also establish a National Water Initiative Coordination Office (with full-time staff funded by interagency contributions) to provide technical and administrative support, serve as a point of contact on federal water activities, and communicate with the public on interagency findings and recommendations.

The National Water Research and Assessment Plan would be a 4-year plan to establish priorities for federal water research, including federally funded research, and would use information and recommendations in prior reports. The bill specifically mentions work by the National Academy of Sciences, and a September 2007 report, A Strategy for Federal Science and Technology to Support Water Availability and Quality in the United States, by the Subcommittee on Water Availability and Quality (SWAQ) of the National Science and Technology Council's committee on Environment and Natural Resources (see WSW #1739). The plan is to: (1) identify current federal agency programs and activities; (2) identify prior fiscal year funding levels; and (3) set forth a strategy and timelines. The plan would be subject to public comments, and would be submitted to Congress one year after enactment of the legislation.

The plan would direct agencies to achieve the following outcomes: "(1) implement a National Water Census, which shall include the collection of data on national water resources to create a comprehensive database that includes information about the quantity, availability, and quality of ground water and surface water resources; (2) development of a new generation of water monitoring techniques; (3) development of technologies for enhancing reliable water supply; (4) development of innovative technologies and tools to enhance water use efficiency and tools to encourage public acceptance of such technologies; (5) development of tools and processes to facilitate resolution of conflicts over water resources; (6) improvement of understanding of water-related ecosystem services and ecosystem needs for water; (7) improvement of hydrologic prediction models and their applications; and (8) analyses of the energy required to provide reliable water supplies and the water required to provide reliable energy supplies through out the United States."

Lastly, the bill calls on the President to establish or designate "an advisory committee to advise the interagency committee," and provide budget coordination and guidance to each federal agency with respect to appropriation requests, as well as a description as part of the annual budget request to Congress of those items that are "elements of the plan or help to achieve the outcomes of the plan." Concurrent with the budget request submission, the President would also submit to Congress a report on activities and results of the Initiative during the previous fiscal year and outline objectives for the next fiscal year, with detailed information on all programs and activities. For a copy, visit www.thomas.loc.gov.